

Title	Manually design a master key system		
Level	3	Credits	2

Purpose	People credited with this unit standard are able to: assess customer requirements for security and access and identify options; design master key systems manually; and finalise system design, produce and store records.
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Classification	Mechanical Engineering > Locksmithing
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Available grade	Achieved
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Guidance Information

- 1 Unit 22455, *Assemble and test key mechanisms*; and Unit 12912, *Design residential and light commercial locking systems* are recommended for entry into this unit standard.
- 2 Legislation
Health and Safety at Work Act 2015.
- 3 Definitions
Accepted industry practice refers to codes of practice and standardised procedures accepted by the wider locksmithing industry as examples of best practice.
Master key system is a generic term to describe a group of cylinders operated by more than one key.
KD – keyed to differ
KA – keyed alike
MK – master keyed
GMK – grand master keyed
GGMK – great grand master keyed.
Workplace procedures refer to the procedures used by the organisation carrying out the work and applicable to the tasks being carried out. Examples are – standard operating procedures, safety procedures, equipment operating procedures, codes of practice, quality management practices and standards, procedures to comply with legislative and local body requirements.
- 4 Assessment information
All activities must comply with applicable workplace procedures and must be consistent with accepted industry practice.

Outcomes and performance criteria

Outcome 1

Assess customer requirements for security and access and identify options.

Performance criteria

- 1.1 Customer needs are discussed and clarified.
- 1.2 Appropriate levels of security and access are reviewed with respect to customer assets, activities, and existing security arrangements.
- Range on site survey, drawings or plans.
- 1.3 Door and lock schedules and other appropriate documentation are prepared according to workplace procedures.
- 1.4 Customer requirements are matched to the mechanical possibilities and limitations of master key systems.
- Range specific client requirements and quantities, completion times and dates, job requirements and tasks, signature authorities, compliance with relevant manufacturer's specifications, warranties and service information.
- 1.5 Security and access options are identified and customer is advised of options and alternatives.
- 1.6 Advice and assistance is sought from appropriate persons in assessing requirements for key systems and master key systems.
- Range key systems may include – restricted, semi-restricted and non-restricted system numbers, manufacturer restricted, factory restricted, locksmith restricted/managed, association restricted levels (KD, KA, MK, GMK, GGMK).

Outcome 2

Design master key systems manually.

Performance criteria

- 2.1 Keying matrix is developed to customer requirements, allowing for future system expansion and mechanical capabilities of system.
- 2.2 A key code progression chart is produced from mathematical permutations as per customer requirements.
- 2.3 Key codes that maximise system security are selected from progression chart.
- 2.4 Key cutting and cylinder loading charts are accurately developed.

2.5 Selected incidental master keys are identified within progression charts.

2.6 Principles of master keying are applied.

Outcome 3

Finalise system design, produce and store records.

Performance criteria

3.1 System design and keying requirements are reviewed and confirmed with customer and supervisor.

3.2 Final system design is explained to customer and confirmed that it meets with customer requirements.

3.3 Documentation is accurately prepared, processed and stored.

Range materials used, key and cylinder coding, identified faults, warranties and recommendations, costs.

Replacement information	This unit standard, unit standard 30969, and unit standard 30970 replaced unit standard 22453.
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Planned review date	31 December 2023
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	1 March 2018	N/A

Consent and Moderation Requirements (CMR) reference	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.